

SEQUENCE LISTING

<110> CHAE, Young-Jin  
CHOI, Eun-Wha

<120> Recombinant peptide vector comprising the gene for treatment for  
autoimmune diseases

<130> OP04-1086

<160> 23

<170> KopatentIn 1.71

<210> 1

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 1

aagacctgaa cactgctcca

20

<210> 2

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 2  
ttgaaattgc ctcagctcct 20

<210> 3  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 3  
gataacagtc atccgtgtca 20

<210> 4  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 4  
gtagcagatg ccgtccacct 20

<210> 5  
<211> 66  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 5  
ctcagtctgg tccttgca ctgtttcca agcatggcga gcatgtcaa agggatgcat 60

gtggct 66

<210> 6  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 6  
gaattcgta gaattcgggc aaggttc 27

<210> 7  
<211> 61  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 7  
aagcttcacc atgggtgtac tgctcacaca gaggacgctg ctcagtctgg tccttgca 60

c 61

<210> 8

<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 8  
gaattcgata acagtcaccc gtctcat

27

<210> 9  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 9  
tctagagtag cagatgccgt ccac

24

<210> 10  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 10  
gccagatata cgcgttgaca t

21

<210> 11  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> primer

<400> 11  
 gcttaatgcg ccgctaca 18

<210> 12  
 <211> 2213  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> therapeutic gene

<400> 12  
 gttgacattg attattgact agttattaat agtaatcaat tacgggggtca ttagttcata 60  
 gcccatatat ggagttccgc gttacataac ttacggtaaa tggcccgctt ggctgaccgc 120  
 ccaacgaccc ccgcccattg acgtcaataa tgacgtatgt tcccatagta acgccaatag 180  
 ggactttcca ttgacgtcaa tgggtggagt atttacggta aactgcccac ttggcagtac 240  
 atcaagtgtg tcatatgccg agtacgcccc ctattgacgt caatgacggt aaatggcccg 300  
 cctggcatta tgcccagtac atgaccttat gggactttcc tacttggcag tacatctacg 360  
 tattagtcac cgctattacc atggtgatgc ggttttgcca gtacatcaat gggcgtggat 420

agcggtttga ctcacgggga ttccaagtc tccaccccat tgacgtcaat gggagtttgt	480
tttggcacca aaatcaacgg gactttcaa aatgtcgtaa caactccgcc ccattgacgc	540
aaatgggchg taggcgtgta cggtagggagg tctatataag cagagctctc tggctaacta	600
gagaaccac tgcttactgg cttatcgaaa ttaatacgac tcactatagg gagaccaag	660
ctggctagcg tttaaactta agcttcacca tgggtgtact gctcacacag aggacgctgc	720
tcagtctggt ccttgcactc ctgtttcaa gcatggcgag catgtccaaa gggatgcatg	780
tggctcagcc tgcagtgggt ctggccagca gccgggggtg tgctagcttc gtgtgtgaat	840
atgggtcttc aggcaacgca gccgaggctc gggtagacgt gctgcggcag gctggcagcc	900
agatgactga agtctgtgcc gcgacataca cagtggagga tgagttggcc ttctggatg	960
attctacctg cactggcacc tccagtggaa acaaagtga cctcaccatc caaggggtga	1020
gggcatgga cacggggctc tacatctgca aggtggagct catgtacca ccaccctact	1080
atgtaggcat gggaaatgga acccagattt atgtcatga tcttgaacct tgcccagatt	1140
ctgacgaatt cgataacagt catccgtctc atccatctcc ctgtccaat gagccccgcc	1200
tgtcactaca gaagccagcc ctcgaggatc tgcttttagg ctccaatgcc agcctcacat	1260
gcacactgag tggcctgaaa gacccaagg gtgccacctt cacctggaac ccctccaaag	1320
ggaaggaacc catccagaag aatcctgagc gtgactcctg tggctgctac agtgtgtcca	1380
gtgtcctacc aggctgtgct gatccatgga accatgggga caccttctcc tgcacagcca	1440
cccaccctga atccaagagc ccgatcactg tcagcatcac caaaaccaca gagcacatcc	1500

cgccccaggt ccacctgctg ccgccgccgt cggaagagct ggccctcaat gagctggtga	1560
cactgacgtg cttggtgagg ggcttcaaac caaaagatgt gctcgtacga tggctgcaag	1620
ggaccagga gctaccccaa gagaagtact tgacctggga gccctgaag gagcctgacc	1680
agaccaacat gtttgccgtg accagcatgc tgagggtgac agccgaagac tggaagcagg	1740
gggagaagtt ctctgcatg gtgggccacg aggctctgcc catgtccttc acccagaaga	1800
ccatcgaccg cctggcgggt aaaccacccc acgtcaacgt gtctgtggtc atggcagagg	1860
tggacggcat ctgctactaa tctagagggc ccgtttaaac ccgctgatca gcctcgactg	1920
tgcttctag ttgccagcca tctgtgttt gccctcccc cgtgccttcc ttgacctgg	1980
aaggtgccac tccactgtc ctttctaataaaaatgagga aattgcatcg cattgtctga	2040
gtaggtgtca ttctattctg gggggtgggg tggggcagga cagcaagggg gaggattggg	2100
aagacaatag caggcatgct ggggatgcgg tgggctctat ggcttctgag gcggaaagaa	2160
ccagctgggg ctctaggggg tatccccacg cgccctgtag cggcgcatta agc	2213

<210> 13  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> primer

<400> 13  
 aagacctgaa caccgctccc

20

<210> 14  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 14  
gttagaattg cctcagctct t

21

<210> 15  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 15  
gagcccaaatt cttgtgacaa aac

23

<210> 16  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<400> 16



agcatcctcg tgcgaccgcg

20

<210> 17

<211> 65

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 17

ctcagtctgg tccttgcaact cctgtttcca agcatggcga gcatggcaat gcacgaggcc

60

cagcc

65

<210> 18

<211> 66

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 18

gaattcgagc ccaaattctc tgacaaaact cacacatccc caccgtcccc agcacctgaa

60

ctctg

66

<210> 19

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 19

tctagaagca tctctgtgcg accgcgagag c

31

<210> 20

<211> 2446

<212> DNA

<213> Artificial Sequence

<220>

<223> therapeutic gene

<400> 20

gttgacattg attattgact agttattaat agtaatcaat tacgggggtca ttagttcata

60

gcccataat ggagttccgc gttacataac ttacggtaaa tggcccgctt ggctgaccgc

120

ccaacgaccc ccgcccattg acgtcaataa tgacgtatgt tccatagta acgccaatag

180

ggactttcca ttgacgtcaa tgggtggagt atttacggta aactgcccac ttggcagtac

240

atcaagtgtg tcatatgcca agtacgcccc ctattgacgt caatgacggt aaatggcccc

300

cctggcatta tgcccagtac atgaccttat gggactttcc tacttggcag tacatctacg

360

tattagtcat cgctattacc atggtgatgc gggtttggca gtacatcaat gggcgtggat

420

agcggtttga ctacgggga ttccaagtc tccaccccat tgacgtcaat gggagtttgt

480

tttggcacca aaatcaacgg gactttccaa aatgtcgtaa caactccgcc ccattgacgc

540

aaatgggagg taggcgtgta cgggtggagg tctatataag cagagctctc tggctaacta	600
gagaacccac tgcttactgg cttatcgaaa ttaatacgac tcactatagg gagaccaag	660
ctggctagcg tttaaactta agcttcacca tgggtgtact gctcacacag aggacgtgc	720
tcagtctggt ccttgcactc ctgtttccaa gcatggcgag catggcaatg cacgtggccc	780
agcctgctgt ggtactggcc agcagccgag gcatgccag ctttgtgtgt gattatgcat	840
ctccaggcaa agccactgag gtccgggtga cagtgtctcg gcaggctgac agccaggta	900
ctgaagtctg tgcggcaacc tacatgatgg ggaatgagtt gaccttcta gatgattcca	960
tctgcacggg cacctccagt ggaaatcaag tgaacctcac tatccaagga ctgagggcca	1020
tggacacggg actctacatc tgcaagggtg agctcatgta cccaccgcca tactacctgg	1080
gcataggcaa cggaaccag atttatgtaa ttgatccaga accgtgcca gattctgacg	1140
aattcgagcc caaatctgt gacaaaactc acacatgcc accgtgcca ggtaagccag	1200
cccaggcctc gccctccagc tcaaggcggg acaggtgcc tagagtagcc tgcattcagg	1260
gacaggcccc agccgggtgc tgacacgtcc acctccatct ctctccagc acctgaactc	1320
ctggggggac cgtcagctt cctctcccc ccaaaacca aggacaccct catgatctcc	1380
cggacccctg aggtcacatg cgtggtggtg gacgtgagcc acgaagacc tgaggtcaag	1440
ttcaactggt acgtggacgg cgtggagggtg cataatgcca agacaaagcc gcgggaggag	1500
cagtacaaca gcacgtaccg ggtggtcagc gtcctaccg tctgcacca ggactggctg	1560
aatggcaagg agtacaagt caaggtctc aacaaagccc tccagcccc catcgagaaa	1620
accatctcca aagccaaagg tgggaccgt ggggtgcgag ggccacatgg acagaggccg	1680

gctcggccca cctctgccc tgagagtgac cgctgtacca acctctgtcc tacagggcag	1740
ccccgagaac cacaggtgta caccctgccc ccatcccgga atgagctgac caagaaccag	1800
gtcagcctga cctgcctggt caaaggcttc tatccagcgc acatcgccgt ggagtgggag	1860
agcaatgggc agccggagaa caactacaag accacgcctc cctgctgga ctccgacggc	1920
tccttcttc tctacagcaa gtcaccgtg gacaagagca ggtggcagca ggggaacgtc	1980
ttctcatgct cctgatgca tgaggctctg cacaaccact acacgcagaa gagcctctcc	2040
ctgtctccgg gtaaatgagt gcgacggccg gcaagccccg ctccccgggc tctcgcggtc	2100
gcacgaggat gcttctagag ggcccgttta aaccgctga tcagcctcga ctgtgccttc	2160
tagttgccag ccatctgttg ttgcccctc ccccgctcct tcctgaccc tggaagggtc	2220
cactcccact gtccttctc aataaaatga ggaaattgca tcgcattgtc tgagtaggtg	2280
tcattctatt ctgggggggtg ggggtggggca ggacagcaag ggggaggatt gggaagacaa	2340
tagcaggcat gctggggatg cgggtgggctc tatggcttct gaggcggaaa gaaccagctg	2400
gggctctagg gggatatccc acgcgcctg tagcggcgca ttaagc	2446

<210> 21

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> N-terminal Gly is acetylated, 2nd a.a can be replaced by Ile, 4th a.a can be replaced by Leu. 10th a.a can be replaced by Arg, 11th a.a can be replaced by Lys, 13th a.a can be replaced by one of

the Leu, Ile, Arg, Gln, Asn and Ser.

<400> 21

Gly Leu Gly Ile Ser Tyr Gly Arg Lys Lys Arg Arg Gly Arg Arg Cys

1

5

10

15

<210> 22

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Linker-1 DNA: 5' end of C forms ester bond with Cys

<400> 22

ctaatacgac tcactat

17

<210> 23

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Linker-2 DNA

<400> 23

gattatgctg agtgat

16